

In the Claims:

Please cancel claims 53-55 without prejudice to the filing of any divisional, continuation or continuation-in-part application.

Please amend claims 42, 44- 47, 51, 52, 56 and 57 to read as follows:

42. (Thrice Amended) An isolated recombinant human adenine nucleotide translocator polypeptide comprising an amino acid sequence that is at least 95 percent identical to a human ANT3 sequence as set forth in SEQ ID NO:33, that is capable of binding an ANT ligand and that is produced by a method comprising culturing a host cell comprising a recombinant expression construct comprising at least one regulated promoter operably linked to a nucleic acid encoding the adenine nucleotide translocator polypeptide.

44. (Twice Amended) The isolated polypeptide of claim 42 wherein the human adenine nucleotide translocator polypeptide has been separated from non-recombinant ANT proteins from non-human species.

45. (Twice Amended) The isolated polypeptide of claim 42 wherein the ANT ligand competitively inhibits binding to ANT of at least one ANT inhibitor that is selected from the group consisting of atractyloside and bongkreikic acid.

46. (Amended) The isolated polypeptide of claim 42 wherein the host cell lacks an endogenous human ANT1 adenine nucleotide translocator polypeptide as set forth in SEQ ID NO:31 and wherein the host cell lacks an endogenous human ANT2 adenine nucleotide translocator polypeptide as set forth in SEQ ID NO:32.

47. (Amended) An isolated recombinant human adenine nucleotide translocator fusion protein comprising an adenine nucleotide translocator (ANT) polypeptide fused to at least one additional polypeptide sequence, wherein the ANT polypeptide comprises an amino acid sequence that is at least 95 percent identical to a human ANT3 sequence as set forth in SEQ ID NO:33.

48. The fusion protein of claim 47 wherein said one additional polypeptide sequence is an enzyme sequence or a variant or fragment thereof.

49. The fusion protein of claim 47 wherein said fusion protein localizes to membranes.

50. The fusion protein of claim 49 wherein said membranes are mitochondrial membranes.

51. (Twice Amended) An isolated human adenine nucleotide translocator fusion protein comprising an adenine translocator polypeptide fused to at least one additional polypeptide sequence cleavable by a protease that separates the adenine translocator polypeptide from the remainder of the fusion protein, said adenine nucleotide translocator polypeptide being capable of binding an ANT ligand, wherein the ANT polypeptide comprises an amino acid sequence that is at least 95 percent identical to a human ANT3 sequence as set forth in SEQ ID NO:33.

52. (Twice Amended) An isolated human recombinant adenine nucleotide translocator according to claim 42 wherein the host cell is selected from the group consisting of a lower eukaryotic cell and a prokaryotic cell.

56. (Amended) An isolated recombinant human adenine nucleotide translocator polypeptide according to claim 42 that is present in an intact mitochondrion or in a submitochondrial particle.

57. (Amended) The fusion protein of claim 47 wherein the additional polypeptide sequence is a polypeptide having affinity for a ligand.